



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
 David W. Thomas) Group Art Unit: 1732
)
 Serial No.: 10/606,988) Confirmation No. 4503
)
 Filed: June 26, 2003) Examiner: Matthew J. Daniels
)
 For: METHOD FOR INLINE) Attorney Docket: 25335A
 PRODUCTION OF SMOOTH)
 SURFACE BOARD)

Mail Stop Appeal Brief
 Commissioner for Patents, P.O. Box 1450
 Alexandria, VA 22313-1450
 Attention: Board of Appeals and Interferences

APPEAL BRIEF pursuant to 37 CFR §41.37

Honorable Sir:

This Appeal Brief is in furtherance to the Notice of Appeal, filed on July 18, 2005. The fees required under 37 C.F.R. § 41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefore and any necessary fees are to be charged to Deposit Account No. 50-0568.

Appellant respectfully requests that the Board of Patent Appeals and Interferences reverse the Examiner as to all rejections.

Respectfully submitted,

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I. Real Party in Interest

The above-identified patent application is owned by Assignor, Owens Corning Fiberglas Technology Inc., a corporation organized and existing by virtue of the laws of the State of Illinois, having its principal place of business in Summit, Illinois.

II. Related Appeals and Interferences

There are no other appeals or interferences that are known to appellant, the appellant's representative, or assignee which will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

Claims 1 - 31 were finally rejected and all claims 1 – 31 are appealed.

IV. Status of Amendments

There are no outstanding unentered amendments.

V. Summary of the Claimed Subject Matter

A. The invention has both a *first conveyor apparatus* and a *pulling apparatus* that exert unequal longitudinal speeds on either a top or a bottom surface of a fibrous board.

The present invention is a method for manufacturing smooth surface board from fibrous material by using a *pulling apparatus* to pull a top or a bottom of a board from an oven at different speeds than the speed at which the board is being moved through the oven by a *first conveyor apparatus*. The different speeds cause unequal longitudinal forces to be exerted on the top and the bottom of the board.

As claimed in independent claim 1 and as disclosed in Fig. 1, and in the specification, at least at page 3, lines 22 - 25 and page 4, lines 20 - 25, the method includes the steps of:

1) moving fibrous material through an oven on a *first conveyor assembly* to produce a board of fibrous material, the first conveyor assembly including a first upper conveyor and a first lower conveyor; and,

2) pulling the board of fibrous material from the oven with a *pulling apparatus* downstream of the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor, and thereby resulting in a smooth surface board.

The present invention also includes another method for manufacturing smooth surface board from fibrous material. As claimed in independent claim 15 and as disclosed in the specification, at least at page 4, lines 20 - 22 and at page 6, lines 15 - 16, the method further includes the step of:

driving one of the first upper conveyor and the first lower conveyor of the first *conveyor apparatus* at a speed faster relative to the other of the first upper conveyor and the first lower conveyor.

According to the present invention, the method for manufacturing smooth fibrous boards includes using two separate apparatuses capable of applying unequal longitudinal forces to either the top or the bottom of the fibrous board.

B. Further inventions (claimed in the dependent claims herein) include novel and separately patentable features of the *first conveyor apparatus* and/or the *pulling apparatus*.

1. Additional Novel Elements of the *Pulling Apparatus*

In certain embodiments, as disclosed in the specification, at least at page 5, line 23, the pulling apparatus applies pressure to a surface of the fibrous material.

In certain embodiments, as disclosed in the specification, at least at page 5, lines 24 – 25, the pulling apparatus applies pressure to a surface of the fibrous material

which is sufficient to prevent skidding of the fibrous material within the pulling apparatus.

In certain embodiments, as disclosed in Fig. 1, and in the specification, at least at page 5, line 19, the pulling apparatus comprises a second conveyor assembly having a second upper conveyor and a second lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 7, lines 1 - 4, the pulling apparatus pulls the board of fibrous material a speed faster than the speed of at least one of the first upper conveyor and the first lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 7, lines 1 - 4, the pulling apparatus pulls the board of fibrous material a speed slower than the speed of at least one of the first upper conveyor and the first lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 7, line 21 to page 8, line 2, the pulling apparatus pulls the board of fibrous material at a speed different from the speed of both the first upper conveyor and the first lower conveyor, thereby causing the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing surfaces of the fibrous material are smoothed.

In certain embodiments, as disclosed in the specification, at least at page 7, lines 13 - 20, the pulling apparatus pulls the board of fibrous material a speed faster than the speed of both the first upper conveyor and the first lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 7, line 21 - page 8, line 2, the pulling apparatus pulls the board of fibrous material a speed slower than the speed of both the first upper conveyor and the first lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 3, lines 13 - 18, the fibrous material is fibrous mineral material.

In certain embodiments, as disclosed in Fig. 2, and in the specification, at least at page 8, line 5, the pulling apparatus comprises a spiked wheel.

In certain embodiments, as disclosed in the specification, at least at page 4, line 6, the first conveyor apparatus has surfaces of the first upper conveyor and the first lower conveyor which are foraminous.

In certain embodiments, as disclosed in the specification, at least at page 4, lines 6 - 7, the first conveyor apparatus has surfaces of the first upper conveyor and the first lower conveyor which are substantially smooth.

2. Additional Novel Elements of the *Pulling Apparatus*

In certain embodiments, as disclosed in the specification, at least at page 6, lines 4 - 7, a surface of the pulling apparatus has a coefficient of friction greater relative to the coefficient of friction of the first conveyor apparatus surfaces of the first upper conveyor and the first lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 5, line 2, the method further including driving one of the first upper conveyor and the first lower conveyor at a speed within the range of from about 0.4 to about 4.0 percent faster relative to the other of the first upper conveyor and the first lower conveyor.

In certain embodiments, as disclosed in the specification, at least at page 6, lines 15 - 16, the board of fibrous material has a density within the range from about 2 pounds per cubic foot to about 8 pounds per cubic foot.

VI. Grounds of Rejection to be Reviewed on Appeal

A. The grounds of rejection were set forth in the Office Action dated May 19, 2005, as follows:

1. Claims 1, 15, 30 and 31 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 4,992,227 to Brossy (hereinafter, "Brossy") in view of U.S. Patent No. 6,030,559 to Barry et al. (hereinafter, "Barry").

2. Claims 2 and 16 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.

3. Claims 3 and 17 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
4. Claims 4 and 18 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
5. Claims 5 and 19 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
6. Claims 6 and 20 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
7. Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable Brossy in view of Barry and over U.S. Patent No. 4,632,685 to Debouzie et al. (hereinafter, "Debouzie").
8. Claims 8, 21 and 22 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry and Debouzie.
9. Claims 9 and 23 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry and Debouzie.
10. Claims 10 and 24 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
11. Claims 11 and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable Brossy in view of the Barry and U.S. Patent No. 5,843,523 to Mazza et al. (hereinafter, "Mazza").
12. Claims 12 and 26 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
13. Claims 13 and 27 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
14. Claims 14 and 28 are rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.
15. Claim 29 is rejected under 35 U.S.C. §103(a) over Brossy in view of Barry.

VII. Arguments of Patentability

A. The criteria for establishing a *prima facie* case of obviousness have not been met.

To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the applied reference must teach or suggest all the claim limitations. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. Further, the fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Appellant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See also MPEP §2143.

Although this conclusion is one of law, such determinations are made against a background of several factual inquiries, one of which is the scope and content of the prior art. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

A prerequisite to making this finding is determining what is "prior art," in order to consider whether "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C §103.

The present invention is a method for manufacturing smooth surface board from fibrous material by using a *pulling apparatus* to pull a top or a bottom of a board

from an oven at different speeds than the speed at which the board is being moved through the oven by a *first conveyor apparatus*.

1. Examiner admits the Brossy reference is silent with respect to claimed elements.

The Examiner has admitted that Brossy is silent with respect to each of the following features:

- the pulling of the board of fibrous material from the oven with a pulling apparatus downstream of the oven (see Office Action at page 3, lines 19-20 and page 4, lines 6-7),
- applying pressure to a surface of the fibrous board (see Office Action at page 4, lines 1-2),
- the pulling apparatus applying pressure which is sufficient to prevent skidding of the fibrous material within the pulling apparatus (see Office Action at page 4, line 21 - page 5, lines 2 and page 5, lines 10-12),
- a pulling apparatus comprising a second conveyor assembly including a second upper conveyor and a second lower conveyor (see Office Action at page 6, lines 4-5 and lines 13-14),
- a pulling apparatus pulling the board of fibrous material (see Office Action at page 7, lines 2-3 and lines 10-11), and
- a pulling apparatus pulling the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor (see Office Action at page 8, lines 6-7 and lines 20-21).

Neither the Brossy nor Barry reference teaches or suggests using a *pulling apparatus* to pull each of the surfaces of the fibrous material at different rates, after the material has left an oven, at a speed different from the speed of *the first conveyor apparatus*. Neither Brossy nor Barry teaches the features where the board of fibrous material is pulled downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor of the *first conveyor apparatus*, causing the fibrous material to skid relative to at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a

different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, the independent claim 1 is thus further patentable over applied references, for at least the reasons presented above.

2. Missing elements not supplied by Barry reference.

The Barry reference fails to teach or supply any of the above listed inventive features. Rather, the Barry reference relates to a method for achieving a uniform thickness of a urethane-type foam that is expanded between opposing facing sheets. According to the Barry reference, an "openwork pattern" fibrous material 13 is used as a reinforcing material as the foam 22 expands against sheets of facing material 11 and 13.

The Barry reference discloses the use of facing sheets 11 and 12 which are pulled through the oven by rollers 18 and 19. There is no teaching or suggestion that the rollers 18 and 19 move at different rates or that the rollers 18 and 19 could orient the web embedded in the foam material. Rather, the Barry reference teaches away from the present invention by requiring that the sheets 11 and 12 provide a stable, and non-sheering, environment in which the foam can "free rise". Any movement of the sheets 11 and 12 at different speeds would cause the open cells in the foam to be distorted and not allow the foam to develop its natural rise profile (see Barry at col. 6, lines 12-20).

Also, the Examiner's citation for Barry's use of fibrous material, at col. 4, lines 25-38, must be read along with the description of the fibrous material 13 found in the Barry reference at col. 4, lines 8-10:

"Whatever the pattern, the web's pattern must be discontinuous for easy penetration by the foamable mixture..." (Emphasis added), and further, at col. 4, lines 20-24:

"Web 13 may, for example, have an average opening (circularized) between fibers ranging in size from about 4 mm to 16 mm. Web 13 is

advantageously about 0.0101 to 0.02 inch thick and about 48 to 53 inches wide, and weighs about 0.5 to 1.0 lb. /100 square feet." (Emphasis added).

According to the Barry reference, the foam expands between the sheets and through the openings in the web (see Barry at col. 4, lines 3-5). The foam thus encloses the web (see Barry at col. 6, lines 5-6). Also, the Barry openwork pattern web 13 is used to prevent crowning of the foam which is encountered in the "free rise" foaming (see Barry at col. 3, lines 5-6). The Barry reference is not directed to producing a sheet of rigid fibrous boards, but is directed to producing a foam board that has an openwork patterned web embedded within the foam to prevent crowning of the foam during its' "free rise" and to provide reinforcement to the foam board.

Rather, the Barry rollers 18 and 19 must rotate at the same speed in order to pull the foam board at an even rate without distorting the foam cells within the foam board.

The modification proposed by the Examiner renders the Barry reference unsatisfactory for its intended purpose. It is well-established that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See also MPEP 2143.01

In contrast, in the present invention, the independent claims 1 and 15 recite manufacturing smooth surface board from "fibrous material". No one skilled in the art of manufacturing fibrous board material would look to the "free rise" foam manufacturing industry with evenly rotating rollers, as described in the Barry reference, as a way to smooth the surface of fibrous materials. The Barry reference fails to address the smooth surfacing solved by the present invention.

3. No motivation exists for modifying the Brossy reference with the Barry reference.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of

the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See also MPEP 4143.01.

Obviousness cannot be established by combining prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. The mere fact that the prior art may be modified in the manner suggested by an examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In this case, the Examiner has not explained “why a person of ordinary skill in the art would have found it obvious” to combine the references in the manner proposed by the Examiner. It is well-settled that “[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the invention.” *Para-Ordnance Mfg Inc. v. SGS Importers Int’l. Inc.* 73 F.3d at 1087, 37 USPQ2d at 1239 (citing *W.L. Gore & Assoc. v. Garlock, Inc.* 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-313). These burdens have not been met in this case. Not only is the prior art lacking in a teaching or motivation to combine the references, even if the combination were made, the result would not read on the claims.

B. The Barry reference is not relevant prior art.

The claims at issue were improperly rejected over Brossy and Barry because Barry is non-analogous art. Whether a reference in the prior art is “analogous” is a fact question. *Panduit Corp. v. Dennison Mfg.*, 810 F.2d 1561, 1568 n.9, 1 USPQ2d 1593, 1597 n.9 (Fed. Cir.), cert. denied, 481 U.S. 1052 (1987).

Two criteria have evolved for determining whether prior art is analogous: 1) whether the art is from the same field of endeavor, regardless of the problem addressed, and 2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. See MPEP 2141.01(a).

The test for analogous art has been stated in *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979), as follows:

In resolving the question of obviousness under 35 USC 103, we presume full knowledge by the inventor of all the prior art in the field of his endeavor. However, with regard to prior art outside the field of his endeavor, we only presume knowledge from those arts reasonably pertinent to the particular problem with which the inventor was involved.

. . . The rationale behind this rule precluding rejections based on combination of teachings of references from nonanalogous arts is the realization that an inventor could not possibly be aware of every teaching in every art. Thus, we attempt to more closely approximate the reality of the circumstances surrounding the making of an invention by only presuming knowledge by the inventor of prior art in the field of his endeavor and in analogous arts. The determination that a reference is from a nonanalogous art is therefore twofold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. (Emphasis added).

Since the prior art asserted by the Examiner as closest is not reasonably pertinent to the particular problem with which the inventor was involved, the focus should be on whether it is from the field of the inventor's endeavor. The Examiner's finding that Barry is within the field of the present inventor's endeavor is misplaced. Barry cannot be considered to be within the inventor's field of endeavor merely because both relate to boards.

Further, a person having ordinary skill in the art would not reasonably have expected to solve the problem of manufacturing a smooth surface board from fibrous material by first conveyor fibrous material through an oven on a first conveyor assembly to produce a board of fibrous material by using conveyors that pull surfaces

of the board at different speeds by considering a reference dealing with a non-shearing environment in which a foam can "free rise".

Therefore, at least for these reasons the Brossy and/or Barry references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in each of the claims herein.

C. Each independent claim recites a novel and patentable invention.

1. Claim 1 is separately patentable.

As fully set forth above, claim 1 is separately patentable over at least the Brossy reference taken either alone or in combination with the Barry reference. The present invention is a method for manufacturing smooth surface board from fibrous material by using a *pulling apparatus* to pull a top or a bottom of a board from an oven at different speeds than the speed at which the board is being moved through the oven by a *first conveyor apparatus*. The different speeds cause unequal longitudinal forces to be exerted on the top and the bottom of the board.

Neither the Brossy nor Barry teaches having both a *first conveyor apparatus 25* and a *pulling apparatus 46* that each has elements which move at different speeds relative to one another.

Neither Brossy nor Barry teaches the features of claim 1, where the board of fibrous material is pulled downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, the independent claim 1 is thus further patentable over applied references, for at least the reasons presented above.

2. Claim 15 is separately patentable.

Also, as fully set forth above, the present invention further recites, in claim 15, another method which further driving one of the first upper conveyor and the first lower conveyor of the first *conveyor apparatus* at a speed faster relative to the other of the first upper conveyor and the first lower conveyor.

Neither the Brossy nor Barry teaches having both a *first conveyor apparatus 25* and a *pulling apparatus 46* that each has elements which move at different speeds relative to one another.

Neither Brossy nor Barry teaches the features of claim 15 where board of fibrous material is pulled downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, the independent claim 15 is thus further patentable over the applied references, for at least the reasons presented above.

D. The following dependent claims are separately patentable.

1. As clearly set forth above, there is no motivation found in the Brossy or Barry, references to find the present inventive method for smoothing the surface of a fibrous board, as defined in the independent claims 1 and 15.

2. Claims 4 and 18 are each patentable under 35 U.S.C. §103(a) over Brossy in view of Barry.

Claim 4, which is dependent from claim 1, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Claim 18, which is dependent from claim 15, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Neither Brossy nor Barry teaches the feature of claims 4 and 18, where the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor; and, at the same time, pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, at least for these reasons the Brossy and/or Barry references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claims 4 and 18.

3. Claims 5 and 19 are each patentable under 35 U.S.C. §103(a) over Brossy in view of Barry.

Claim 5, which is dependent from claim 1, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Claim 19, which is dependent from claim 15, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Neither Brossy nor Barry teaches the feature of claims 5 and 19, where the pulling apparatus pulls the board of fibrous material a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor; and, at the same time, pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is

pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, at least for these reasons the Brossy and/or Barry references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claims 5 and 19.

4. Claims 6 and 20 are each patentable under 35 U.S.C. §103(a) over Brossy in view of Barry.

Claim 6, which is dependent from claim 1, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Claim 20, which is dependent from claim 15, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Neither Brossy nor Barry teaches the feature of claims 6 and 20, where the pulling apparatus pulls the board of fibrous material a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor; and, at the same time, pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, at least for these reasons the Brossy and/or Barry references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claims 6 and 20.

5. Claim 7 is patentable under 35 U.S.C. §103(a) as being unpatentable Brossy in view of Barry and Debouzie.

Claim 7, which is dependent from claim 1, is further patentable over at least the Brossy reference, taken either alone or in combination with the Barry and Debouzie references.

Neither Brossy nor Barry teach the feature of claims 7 and 21, the pulling apparatus pulls the board of fibrous material at a speed different from the speed of both the first upper conveyor and the first lower conveyor, thereby causing the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor, such that the opposing surfaces of the fibrous material are smoothed.

Neither Brossy nor Barry teaches pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

The Examiner admits that Brossy and Barry are silent with respect to the following feature:

- the pulling the boards of fibrous material at a speed different relative to both the first upper conveyor and the first lower conveyor (see Office Action at page 9, lines 18-19).

As clearly set forth above, there is no motivation to look to the Barry reference since Barry teaches away from the present invention and is also not relevant to the method of smoothing fibrous surfaces. A *prima facie* case of obviousness is rebuttable by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). See also MPEP 4143.01

Without the Barry reference, there is no further motivation to find the present inventive method for smoothing the surface of a fibrous board without requiring

expending undesirable time and effort in fabricating smooth surfaced fibrous boards in the Debouzie reference.

The Debouzie reference shows, at col. 2, line 63 to col. 3, line 3, a method for making felt where the felt is compressed by being moved from one pairs of conveyors “driven at a certain speed” to an adjacent pair of conveyors “driven at a lower speed.” Debouzie teaches away from the present invention by stating, at col. 6, lines 35 – 39:

“...the speeds of the pairs of conveyors 7, 8, 9, 10, 11, 12 are regulated to ensure the same rate of progress of the two faces of the felt.”
(Emphasis added).

There is no teaching or suggestion in the Debouzie reference where a top conveyor is driven at a rate different from a bottom conveyor.

Therefore, at least for these reasons the Brossy and/or Barry and Debouzie references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claim 7.

6. Claims 8, 21 and 22 are each patentable under 35 U.S.C. §103(a) over Brossy in view of Barry and Debouzie.

Neither Brossy nor Barry teaches the feature of claims 8 and 22, where the pulling apparatus pulls the board of fibrous material a speed faster than the speed of both the first upper conveyor and the first lower conveyor.

Claim 8, which is dependent from claim 1, and claims 21 and 22, which depend from claim 15, are further patentable over at least the Brossy reference, taken either alone or in combination with the Barry and Debouzie references, and requests withdrawal of the rejection under 35 U.S.C. §103.

The Examiner admits that Brossy, Barry and Debouzie are silent with respect to the following feature:

- the pulling apparatus pulling the board of fibrous material at a speed faster than the speed of both the first upper conveyor and the first lower conveyor (see Office Action at page 10, lines 17-18; page 12, lines 19-20).

None of the Brossy, Barry or Debouzie references teaches pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Further, as fully set forth above, Debouzie requires that the speeds of the pairs of conveyors are regulated to ensure the same rate of progress of the two faces of the felt. There is no teaching or suggestion in the Debouzie reference where a top conveyor is driven at a rate different from a bottom conveyor.

Therefore, at least for these reasons the Brossy and/or Barry and Debouzie references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claims 8, 21 and 22.

7. Claims 9 and 23 are each patentable under 35 U.S.C. §103(a) over Brossy in view of Barry and Debouzie.

Claim 9, which is dependent from claim 1, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry and Debouzie references.

Claim 23, which is dependent from claim 15, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry and Debouzie references.

The Examiner admits that Brossy and Barry are silent with respect to the following feature:

- the pulling apparatus pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and the first lower conveyor (see Office Action at page 14, lines 4-5, 16-17 and 19-20).

None of the Brossy, Barry or Debouzie references teaches pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Further, as fully set forth above, Debouzie requires that the speeds of the pairs of conveyors are regulated to ensure the same rate of progress of the two faces of the felt. There is no teaching or suggestion in the Debouzie reference where a top conveyor is driven at a rate different from a bottom conveyor.

Therefore, at least for these reasons the Brossy and/or Barry and Debouzie references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claims 9 and 23.

8. Claims 14 and 28 are each patentable under 35 U.S.C. §103(a) over Brossy in view of Barry.

Claim 14, which is dependent from claim 1, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Claim 28, which is dependent from claim 15, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Neither Brossy nor Barry teaches the feature of claims 14 and 28, where a surface of the *pulling apparatus* has a coefficient of friction greater relative to the coefficient of friction of the surfaces of the *first pulling conveyor's* first upper conveyor and first lower conveyor; and, at the same time, pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that

the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, at least for these reasons the Brossy and/or Barry references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claims 14 and 28.

9. Claim 29 is patentable under 35 U.S.C. §103(a) over Brossy in view of Barry.

Claim 29, which is dependent from claim 1, is further patentable over at least the Brossy reference taken either alone or in combination with the Barry reference.

Neither Brossy nor Barry teaches the feature of claim 29 which includes driving one of the first upper conveyor and the first lower conveyor at a speed within the range of from about 0.4 to about 4.0 percent faster relative to the other of the first upper conveyor and the first lower conveyor; and, at the same time, pulling the board of fibrous material downstream from the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor. That is, each surface of the board is pulled at a different rate within the oven so that the heat and differential stretching caused by the pulling surprisingly forms a desirably smooth surface.

Therefore, at least for these reasons the Brossy and/or Barry references, taken alone or in combination with the other cited references, fail to teach or suggest the invention defined in claim 29.

Conclusion

In view of the above remarks, Appellant has shown that the claims are in proper form for allowance, and the invention, as defined in the claims herein, is neither disclosed nor suggested by the references of record. In view of the foregoing arguments, the rejections of the claims 1 - 31 are in error, and should be reversed.

Appellant accordingly respectfully requests that the Board of Patent Appeals and Interferences reverse the Examiner as to all rejections.

Claims Appendix

1. A method for manufacturing smooth surface board from fibrous material, the method comprising the steps of:
first conveyor fibrous material through an oven on a first conveyor assembly to produce a board of fibrous material, the first conveyor assembly including a first upper conveyor and a first lower conveyor; and
pulling the board of fibrous material from the oven with a pulling apparatus downstream of the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor, and thereby resulting in a smooth surface board.
2. The method according to Claim 1, wherein the pulling apparatus applies pressure to a surface of the fibrous material.
3. The method according to Claim 1, wherein the pulling apparatus applies pressure to a surface of the fibrous material, the pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus.
4. The method according to Claim 1, wherein the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor.
5. The method according to Claim 1, wherein the pulling apparatus pulls the board of fibrous material a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor.

6. The method according to Claim 1, wherein the pulling apparatus pulls the board of fibrous material a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor.

7. The method according to Claim 1, wherein the pulling apparatus pulls the board of fibrous material at a speed different from the speed of both the first upper conveyor and the first lower conveyor, thereby causing the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor, such that the opposing surfaces of the fibrous material are smoothed.

8. The method according to Claim 7, wherein the pulling apparatus pulls the board of fibrous material a speed faster than the speed of both the first upper conveyor and the first lower conveyor.

9. The method according to Claim 7, wherein the pulling apparatus pulls the board of fibrous material a speed slower than the speed of both the first upper conveyor and the first lower conveyor.

10. The method according to Claim 1, wherein the fibrous material is fibrous mineral material.

11. The method according to Claim 1, wherein the pulling apparatus comprises a spiked wheel.

12. The method according to Claim 1, wherein surfaces of the first upper conveyor and the first lower conveyor are foraminous.

13. The method according to Claim 1, wherein surfaces of the first upper conveyor and the first lower conveyor are substantially smooth.

14. The method according to Claim 1, wherein a surface of the pulling apparatus has a coefficient of friction greater relative to the coefficient of friction of the surfaces of the first upper conveyor and the first lower conveyor.

15. A method for manufacturing smooth surface board from fibrous material, the method comprising the steps of:

first conveyor fibrous material through an oven on a first conveyor assembly to produce a board of fibrous material, the first conveyor assembly including a first upper conveyor and a first lower conveyor;

driving one of the first upper conveyor and the first lower conveyor at a speed faster relative to the other of the first upper conveyor and the first lower conveyor;

pulling the board of fibrous material from the oven with a pulling apparatus downstream of the oven at a speed different from the speed of least one of the first upper conveyor and the first lower conveyor, causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor, and thereby resulting in a smooth surface board.

16. The method according to Claim 15, wherein the pulling apparatus applies pressure to a surface of the fibrous material.

17. The method according to Claim 15, wherein the pulling apparatus applies pressure to a surface of the fibrous material, the pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus.

18. The method according to Claim 15, wherein the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor.

19. The method according to Claim 15, wherein the pulling apparatus pulls the board of fibrous material a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor.

20. The method according to Claim 15, wherein the pulling apparatus pulls the board of fibrous material a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor.

21. The method according to Claim 15, wherein the pulling apparatus pulls the board of fibrous material at a speed different from the speed of both the first upper conveyor and the first lower conveyor, thereby causing the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor, such that the opposing surfaces of the fibrous material are smoothed.

22. The method according to Claim 21, wherein the pulling apparatus pulls the board of fibrous material a speed faster than the speed of both the first upper conveyor and the first lower conveyor.

23. The method according to Claim 21, wherein the pulling apparatus pulls the board of fibrous material a speed slower than the speed of both the first upper conveyor and the first lower conveyor.

24. The method according to Claim 15, wherein the fibrous material is fibrous mineral material.

25. The method according to Claim 15, wherein the pulling apparatus comprises a spiked wheel.

26. The method according to Claim 15, wherein surfaces of the first upper conveyor and the first lower conveyor are foraminous.

27. The method according to Claim 15, wherein surfaces of the first upper conveyor and the first lower conveyor are substantially smooth.

28. The method according to Claim 15, wherein a surface of the pulling apparatus has a coefficient of friction greater relative to the coefficient of friction of the surfaces of the first upper conveyor and the first lower conveyor.

29. The method according to Claim 15, further including driving one of the first upper conveyor and the first lower conveyor at a speed within the range of from about 0.4 to about 4.0 percent faster relative to the other of the first upper conveyor and the first lower conveyor.

30. The method according to Claim 1, wherein the board of fibrous material has a density within the range from about 2 pounds per cubic foot to about 8 pounds per cubic foot.

31. The method according to Claim 15, wherein the board of fibrous material has a density within the range from about 2 pounds per cubic foot to about 8 pounds per cubic foot.

Evidence Appendix

There is no outside evidence.

Related Proceedings Appendix

There are no related proceedings.

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P.O. Box 1450

Alexandria, VA 22313-1450, on September 19, 2005.

s/ Jan Hostasa

Jan Hostasa

